CLAIMS

We claim:

1. A method for distributed processing through a server and a remote client wherein an application is executed entirely in the server, wherein the application is configured to interact with a user interface toolkit according to an application programming interface, and wherein the user interface toolkit has a component that performs a function, the method comprising:

providing the user interface toolkit on the remote client such that the component is configured to perform the function on the remote client;

providing a remote-capable user interface toolkit on the server by creating a remote-capable component which is configured to interact with the application according to the application programming interface and which is configured to generate a message to the component on the remote client to perform the respective function on the remote client;

invoking the remote-capable user interface toolkit by the application to perform a function according to the application programming interface ;

generating the message to perform the function by the remote-capable component of the remote-capable user interface toolkit on the server in response to the invocation by the application;

communicating the message between the remote-capable user interface toolkit on the server and the user interface toolkit on the remote client; and

performing the function on the remote client by the component of the user interface toolkit in response to the message.

2. The method of claim 1, wherein the component in the user interface toolkit is configured to render a graphical item and the remote-capable component is configured to generate a message to render the graphical item, and wherein communicating the message between the remote-capable user interface toolkit on the server and the user interface toolkit on the remote client comprises transmitting the message to the user interface toolkit on the remote client to render the graphical item.

3. The method of claim 2, wherein performing the function on the remote client by the component of the user interface toolkit comprises rendering the graphical item on the remote client in response to the message.

4. The method of claim 1, wherein the component in the user interface toolkit is configured to install an event handler and the remote-capable component is configured to generate a message to install the event handler, and wherein communicating the message between the remote-capable user interface toolkit on the server and the user interface toolkit on the remote client comprises transmitting the message to the user interface toolkit on the remote client to install an event handler.

5. The method of claim 4, wherein performing the function on the remote client by the component of the user interface toolkit comprises installing the event handler on the remote client in response to the message.

6. The method of claim 1, which further comprises:

generating an event by the remote-capable component of the remote-capable user interface toolkit in response to the step of invoking; and

wherein communicating the message between the remote-capable user interface toolkit on the server and the user interface toolkit on the remote client comprises asynchronously transmitting the event to the user interface toolkit.

7. The method of claim 6, wherein the application is a database searching application configured to search a database for information in response to a user-defined request,

wherein the step of generating an event by the remote-capable component of the remote-capable user interface toolkit comprises identifying information from the database in response to the user-defined request; and

wherein the step of asynchronously transmitting the event to the user interface toolkit comprises asynchronously transmitting a message to the remote client to render the information from the database identified in the step of generating an event.

8. The method of claim 7, wherein the application is a web browser and wherein the database is the World Wide Web,

wherein the step of identifying information from the database comprises identifying information from the World Wide Web; and

wherein the step of asynchronously transmitting a command to the remote client to render the information from the database comprises asynchronously transmitting a command to the remote client to render the information from the World Wide Web.

9. The method of claim 1 wherein the step of providing a remote-capable user interface toolkit on the server further comprises:

providing a code-generating computer program configured to read in the code of the component of the user interface toolkit and to generate the remote-capable component of the remote-capable user interface toolkit by substituting a portion of the code relevant to executing the function with a portion of code configured to issue a remote command to execute the function;

reading in the code of the component of the user interface toolkit;

generating the remote-capable component of the remote-capable user interface toolkit by copying the code of the component and by substituting the portion of the code relevant to executing the function with the portion of code configured to issue the remote command to execute the function

10. A distributed computer system having at least one server and one remote client wherein the server executes the entire application on the server, wherein the application is configured to interact with a user interface toolkit according to an application

programming interface, and wherein the user interface toolkit has a component that performs a function, the distributed computer system comprising:

a user interface toolkit on the remote client having a component configured to perform a function on the remote client;

a remote-capable user interface toolkit on the server having a remote-capable component which is configured to interact with the application according to the application programming interface, and which is configured to generate a message to the component on the remote client to perform the respective function on the remote client in response to an invocation of the function by the application;

a server configured to communicate the message between the remote-capable user interface toolkit on the server and the user interface toolkit on the remote client; and

a remote client configured to performing the function by the component of the user interface toolkit in response to the message.

11. The distributed computer system of claim 10, wherein the component in the user interface toolkit is configured to render a graphical item and the remote-capable component is configured to generate a message to render the graphical item

12. The distributed computer system of claim 11, wherein the server is configured to communicate the message to the user interface toolkit on the remote client to render the graphical item.

13. The distributed computer system of claim 12, wherein the component of the user interface toolkit on the remote client is configured to render the graphical item in response to the message.

14. The distributed computer system of claim 10, wherein the component in the user interface toolkit is configured to render an item and the remote-capable component is configured to generate a message to render the item

15. The distributed computer system of claim 14, wherein the server is configured to communicate the message to the user interface toolkit on the remote client to render the item.

16. The distributed computer system of claim 15, wherein the component of the user interface toolkit on the remote client is configured to render the item in response to the message.

17. The distributed computer system of claim 10, wherein the component in the user interface toolkit is configured to install an event handler and the remote-capable component is configured to generate a command to install an event handler.

18. The distributed computer system of claim 17, wherein the server is configured to communicate the message to the user interface toolkit on the remote client to install the event handler.

19. The distributed computer system of claim 18, wherein the component of the user interface toolkit is configured to install the event handler on the remote client in response to the message.

20. The distributed computer system of claim 10:

wherein the remote-capable component of the remote-capable user interface toolkit is configured to generate an event in response to the step of invoking; and

wherein the server is configured to asynchronously communicate a message to generate the event to the user interface toolkit on the remote client.